

ABSTRACT OF THE DISCLOSURE

A photoresist with adjustable polarized light response and a photolithography process using the photoresist. The photoresist and the photolithography process are suitable for use in an exposure optical system with a high numerical aperture. The 5 photoresist includes a photosensitive polymer that can absorb the exposure light source to generate an optical reaction. The photosensitive polymer can also be oriented along a direction of an electric field or a magnetic field. The response for the photosensitive upon a polarized light is determined by an angle between the predetermined direction and the polarized light. In addition, the photolithography process adjusts the orientation of the 10 photosensitive polymer, so that the P-polarized light has a weaker response than that of the S-polarized light to compensate for the larger transmission coefficient of the P-polarized light with a high numerical aperture, so as to prevent the photoresist pattern deformation.

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